



2228 Pontneddfechan Green Infrastructure Statement

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Contents

01

Introduction

02

Site Context

03

GI Policy Context

04

The DECCA Framework and
Net Benefits for Biodiversity

05

Existing Site

06

Landscape Strategy

07

Demonstrating Net Benefits
for Biodiversity [NBB]

08

Conclusion



Introduction

This report has been produced to support the proposed development of the Pontneddfechan Visitor Hub, in Pontneddfechan, Neath.

The proposals provide a new visitor hub, accommodation and car parking for visitors to the Pontneddfechan Waterfalls set within a Green Infrastructure Framework.

Davies Landscape Architects (DLA) have been commissioned by Andrew Scott Ltd. to set out the Green Infrastructure (GI) strategy summarised in the following document.

This report sets out the GI considerations in relation to the existing site conditions and its setting. The report also sets out the design considerations and opportunities considered to enhance and maximise, not only the site's GI, but its contribution to the wider network.

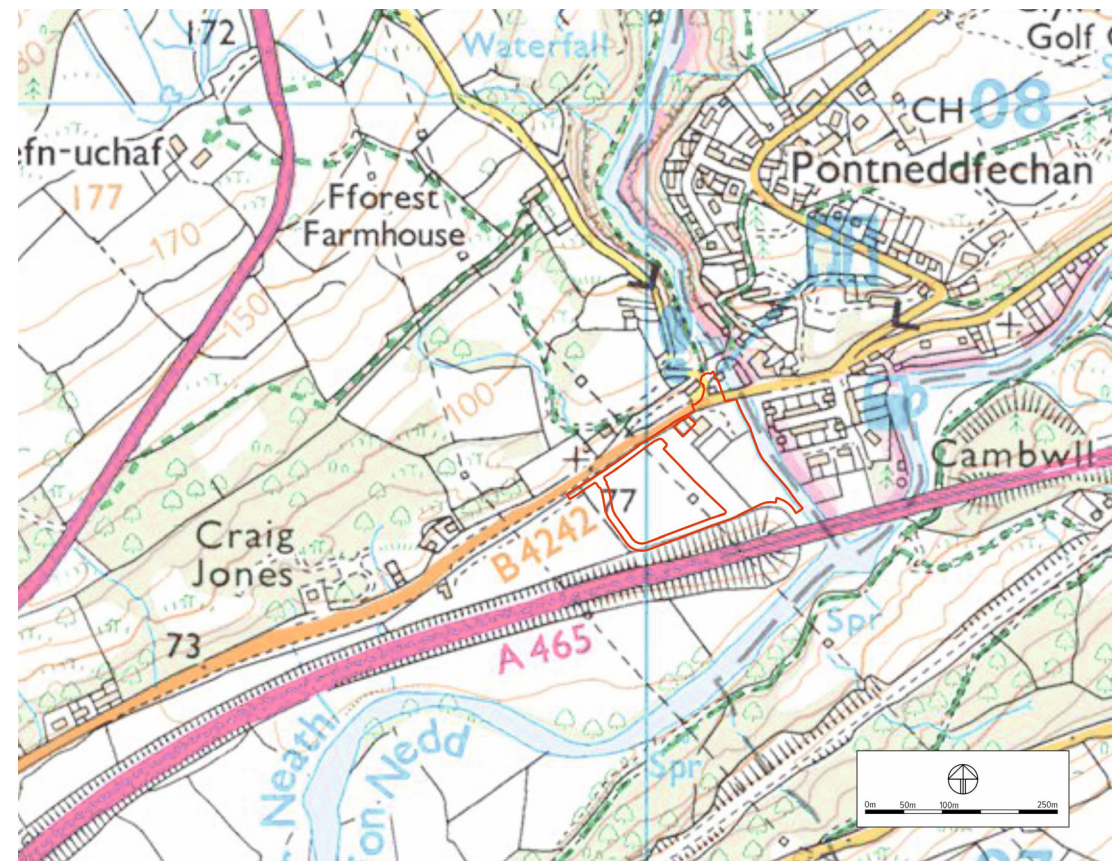


Figure 01 - Site Location

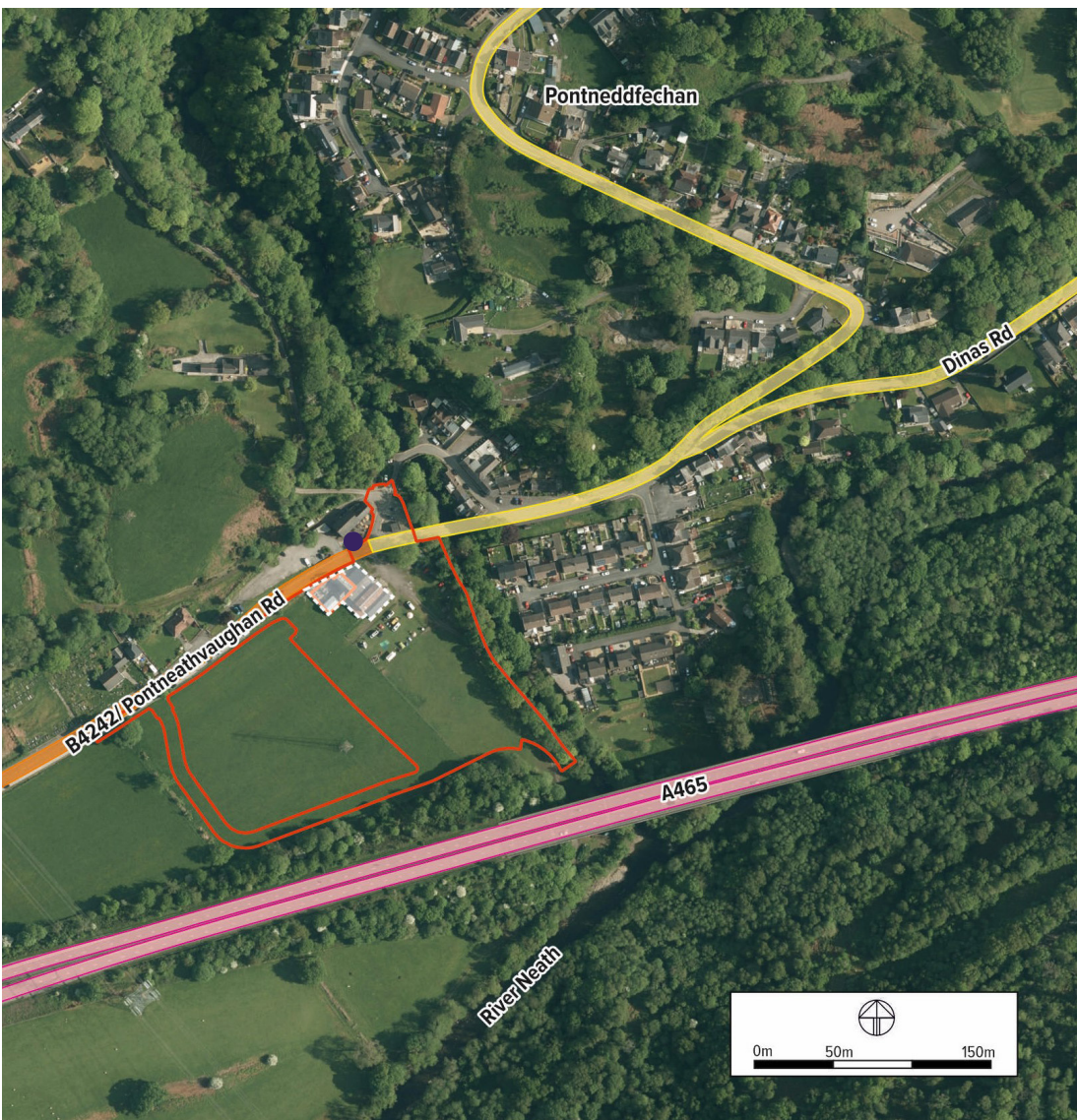


Figure 02 - Site Context

Site Context

The site is located on the western edge of the village of Pontneddfechan, northeast of Neath, Powys, South Wales. The site lies outside the boundary of the Brecon Beacons National Park.

The site comprises of two small paddocks and yard area located to the south of Pontneddfechan Road. Access to the site is via an existing entrance directly north of the existing café (GWLADYS).

The eastern boundary is formed by the well-vegetated River Neath corridor and the A465 to the south. A circa 40m wide treebelt provides a vegetated edge between the site and the road.

To the west, the site boundary is open to further grazing land.

The topography is gently sloping north to south, consistent with its location near the bottom of the Neath Valley.

GI Policy Context

Planning Policy Wales defines GI as ‘the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places’¹. Component elements of green infrastructure can function at different scales and some components, such as trees and woodland, are often universally present and function at all levels.

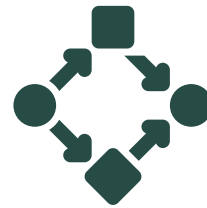
The Environment (Wales) Act 2016, provides a context for the delivery of multi-benefit green infrastructure. Its protection and provision can make a significant contribution to the sustainable management of natural resources and, in particular, to protecting, maintaining and enhancing biodiversity and the resilience of ecosystems in terms of the diversity within, and connections between, ecosystems and the extent and condition of these ecosystems so that they are better able to resist, recover from, and adapt to pressures.²

The quality of the built environment should be enhanced by integrating green infrastructure into development through appropriate site selection and use of creative design. With careful planning and design, informed by an appropriate level of assessment, green infrastructure can embed the benefits of biodiversity and ecosystem services into new development and places, help to overcome the potential for conflicting objectives, and contribute to health and well-being outcomes.

¹ Welsh Government (2024) Planning Policy Wales; Edition 12.

² Welsh Government (2016) Environment (Wales) Act 2016.

The strategy has been developed to encompass the following principles of GI, as embedded in Planning Policy Wales, 2024, to ensure the landscape maximises the benefits to people and wildlife:



Provide Multiple Benefits



Support Climate Resilience



Community and Health Benefits



Biodiversity Enhancements



Sustainable Development Goals

The DECCA Framework and Net Benefits for Biodiversity

The DECCA framework is used for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act 2016.

These are: Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience.¹

A summary of their definitions and application within the site is provided below:

Diversity

Definition: Maintaining and enhancing diversity at every scale, including genetic, structural, habitat and between habitat levels. This supports the complexity of ecosystem functions and interactions that deliver services and benefits.

Application: The soft landscape design enhances biodiversity at multiple levels through native species selection, layered planting, diverse grass swards, and habitat connectivity. These features boost genetic, structural, and habitat diversity, supporting complex ecological interactions and ensuring a resilient ecosystem capable of delivering essential services and benefits.

Extent

Definition: Incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats. In general, smaller ecosystems have reduced capacity to adapt, recover or resist disturbance.

Application: The soft landscape design increases habitat extent by adding native trees, shrubs, and diverse grass swards, transforming the area into a multi-layered ecosystem. Buffer plantings create continuous linkages to nearby habitats, reducing fragmentation and strengthening the ecosystem’s capacity to adapt, recover, and resist disturbances.

Condition

Definition: The condition of an ecosystem is affected by multiple and complex pressures acting both as short term and longer term types of disturbance. Both direct and wider impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc.

Application: The soft landscape design supports ecosystem condition by using native species, layered planting, and diverse grass types that minimize pollution, resist invasives, and reduce climate vulnerability. Buffer plantings filter runoff and protect soil, while diverse vegetation enhances resilience to disturbances, preserving ecosystem health and stability.

Connectivity

Definition: This refers to the links between and within habitats, which may take the form of physical corridors, stepping stones in the landscape, or patches of the same or related vegetation types that together create a network that enables the flow or movement of genes, species and natural resources. Developments should take opportunities to develop functional habitat and ecological networks within and between ecosystems, building on existing connectivity.

Application: The design enhances connectivity by establishing habitat corridors and ecological stepping stones. Native trees, hedgerows, shrub

planting, and buffer zones link habitats, allowing wildlife movement and gene flow. Together, these features create a cohesive network that integrates the development with surrounding ecosystems, supporting biodiversity.

Aspects of Ecosystem Resilience

Definition: (Adaptability, recovery and resistance) Ecosystem resilience is a product of the above four attributes. Adaptability, recovery and resistance to/ from a disturbance are defining features of ecosystem resilience.

The soft landscape design promotes ecosystem resilience through diverse, native planting that enhances adaptability, recovery, and resistance. Native trees, hedgerows, varied grass swards, and buffer plantings provide ecological redundancy, protect against disturbances, and foster biodiversity, ensuring the landscape can withstand and adapt to environmental changes over time.

¹ Welsh Government (2016) Environment (Wales) Act 2016.



Existing Site



- Site boundary
- Views
- Open boundary
- Existing buildings

Figure 03 - Site



01 Elevated views from A465 through gap in southern boundary.¹



02 View into site from Dinas Road.²



03 View across open boundary into the site.³

1 Google Earth (2024) A465 Wales. Google.
2 Google Earth (2024) Dinas Road. Google.
3 Google Earth (2024) Pontneathvaughan Road. Google.

Landscape Strategy

The landscape proposals seek to maintain and enhance diversity where possible by introducing new and varied habitats into the existing GI. The extent of habitats have been increased by introducing new hedges, areas of native scrub, wildflower meadow and rain gardens; enhancing the species diversity and connectivity.



Figure 04 - Site Strategy

1. Enhance River Neath corridor with native buffer planting.
2. Creation of wet grassland habitat next to River Neath corridor.
3. Plant new native hedgerow and trees along this existing field boundary (currently only defined by a post and wood fence).
4. Removal of hard paved space next to River Neath corridor, replaced by soft landscape.
5. Semi-ornamental planting and meadow sward enhances site biodiversity and amenity.
6. Loss of grassland for car park hard surface and building footprint.



Provide Multiple Benefits:

There is a limited range of existing landscape and GI features within the site—consisting of heavily-grazed, semi-improved grassland and narrow edges of longer grass and vegetation leading towards the edge of the River Neath. Although the site harbors limited GI, its eastern and southern boundary abut significant green corridors of mature trees and established vegetation linking into significant GI elements in the wider area such as broadleaf woodland within the River Neath Corridor to the north and south of the site and established woodland embankments to the A465.

The landscape design for the site includes a range of GI features for the benefit of people and wildlife. These include native tree planting to improve amenity as well as providing summer shade and a food source for wildlife.

The planting designs include native hedges, formal hedges, semi-ornamental shrubs and those that are known to support wildlife. This will improve amenity and tie in visually with the adjoining landscape. This planting also provides safe routes through the sites for mammals and foraging opportunities for local fauna.

Areas of wildflower meadow are also proposed to the edges of the site and as a ground cover to scrub and woodland edge planting. The proposed seed mix contains a range of flowering species which will add to the amenity and support endangered species such as bees and butterflies. The combination of the above measures will enhance biodiversity across the site and demonstrate every effort is being made to create a multi-functional landscape integrated within the wider GI context.



Support Climate Resilience:

The drainage design includes a Sustainable Urban Drainage System. [SUDS] and this design comprises a series of rain gardens associated with the Development.

This provides an excellent opportunity at surface level to create rich wetland and grassland habitats capable of holding water on site. This will improve and manage water quality, enhance biodiversity as well as provide amenity for the people using the site.



Community and Health Benefits:

The underlying principles of the landscape design for the site are to create an attractive setting for the Visitor Hub, appropriate for the surrounding context and for the benefit of all users. This will be achieved by making connections to surrounding GI features where possible and introducing new native tree and shrub planting as well as native hedges and areas of wildflower meadow as described earlier.

The combination of the above GI features will contribute positively to the amenity of the site

and to the well-being of those who work within the site and/ or visit.



Biodiversity Enhancements:

The planting scheme includes a large number of native species and species noted for wildlife value. These features include trees, hedges, shrubs, wildflowers and wetland habitats across the site.

In addition to the habitats created through the planting design, the site will also include other ecological measures. Bat and bird boxes will be installed on the walls of the new Visitor Hub building and existing trees.

Sustainable Development Goals:



The planting design for the development has been carefully considered to ensure that it is not reliant on artificial irrigation.

The only exception to this could be during the establishment period, where, during periods of prolonged dry weather, the young plants may require some watering to prevent loss and to aid their successful establishment. In these circumstances, the watering should be carried out using harvested rainwater where possible.

Demonstrating Net Benefits for Biodiversity [NBB]

The landscape proposals for the site demonstrate that they can both maintain and enhance biodiversity, and built resilient ecological networks. The biodiversity enhancements described above achieve NBB by following the Step-Wise Approach of firstly avoiding, then minimising, mitigating and, as a last resort, compensating for, adverse impacts on the environment in a development.¹

Where removal of existing vegetation has been unavoidable, for example; due to the facilitation of the development, this has been minimised and then mitigated with new planting and ecological measures to ensure the appropriate restoration of habitats.

Care has been taken to avoid detrimental impacts on adjacent established GI elements such as the River Neath corridor.

All the mitigation measures have been included within the site and these are listed on the Masterplan, demonstrating that all attempts have been made to compensate on site.

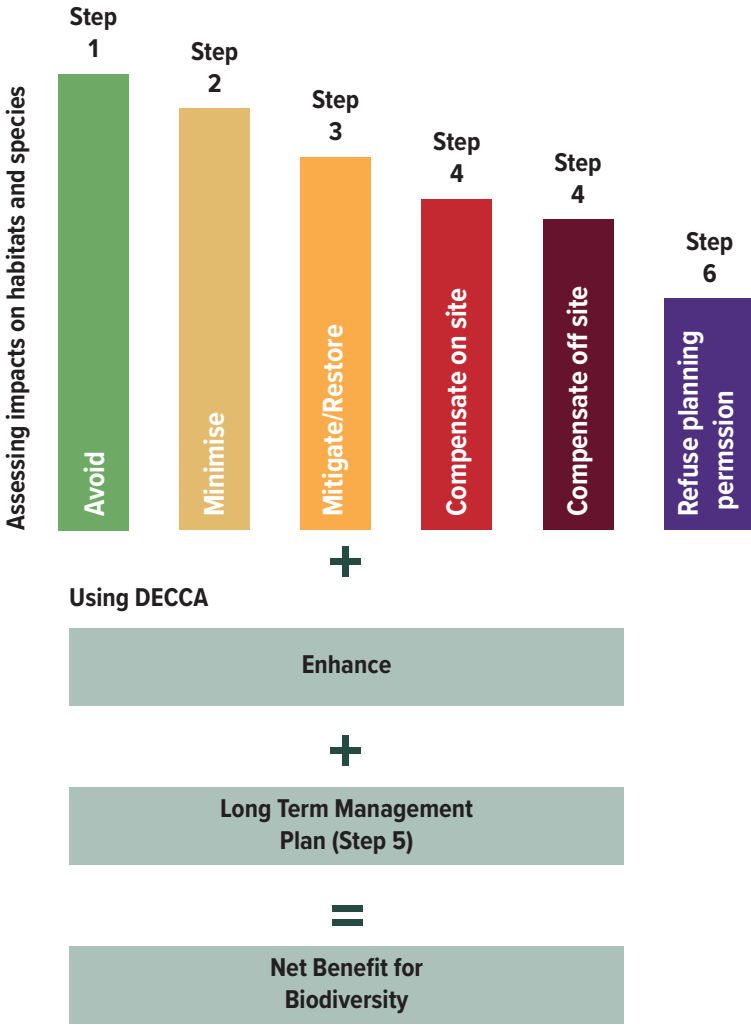
The NBB's for the site have been achieved through a range of actions, ranging from installation of bat and bird boxes to the creation, restoration, and/ or long-term management of habitats.

In developing the soft landscape scheme for the site in Pontneddfechan, we prioritized the selection of native planting species that reflect the local flora, adhering to the DECCA framework and its step-wise approach.

The proposed shrub mix, including species such as *Asplenium scolopendrium*, *Cornus alba sibirica*, and *Viburnum opulus*, is carefully curated to mimic the native habitats, promoting biodiversity and ecological integrity. Additionally, the Rain Garden Planting Mixes, featuring species like *Caltha palustris* and *Juncus effusus*, are designed to enhance water management while further supporting local wildlife. The inclusion of diverse grass mixes, such as Emorsgate EM8 and EM34, ensures a vibrant and sustainable meadow habitat throughout the site.

This strategic planting approach not only aligns with local biodiversity objectives but also fosters a resilient landscape that harmonizes with the surrounding environment.

Summary of the Step-Wise Approach



Conclusion

The existing on-site and off-site landscape has been assessed and, whilst there are limited existing GI resources on-site, there are opportunities to make connections to well-established resources immediately off-site. In enhancing the on-site GI resource through new diverse planting and making these connections to adjacent off-site resources, the scheme has the potential to make positive contribution to both the site and surrounding GI network.

The impact of the new built development will be mitigated by creating new planting zones, wildflower meadows and other landscape features which will improve biodiversity, provide important ecological habitats and enhance the amenity value of the site.

The successful establishment of the landscape design will provide a network of healthy, multi-functional and biodiverse green spaces, capable of delivering a wide range of environmental and quality-of-life benefits for people and wildlife.



